

AMENDMENTS TO THE CLAIMS

In the claims:

1. (currently amended): A process to produce a purified carboxylic acid slurry, said process comprising removing impurities from a crystallized product in a solid liquid displacement zone to form said purified carboxylic acid slurry; wherein said purified carboxylic acid slurry has a b^* of less than 3.5; wherein said purified carboxylic acid slurry is formed without a hydrogenation ~~step~~ step; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C and 200°C.
2. (currently amended): A process to purify a staged oxidation product said process comprising removing impurities from said staged oxidation product in a solid liquid displacement zone to form a purified staged oxidation product; wherein said purified staged oxidation product has a b^* of less than 3.5; wherein said purified staged oxidation product is formed without a hydrogenation ~~step~~ step; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C and 200°C.
3. (canceled)

4. (currently amended): The process according to claim 1 or 2 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 120°C to about 180°C.
5. (currently amended): The process according to claim 1 or 2 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 140°C to about 160°C.
6. (currently amended): The process according to claim 1 or 2 wherein said solid liquid displacement zone comprises solid liquid separator is a decanter centrifuge.
7. (currently amended): The process according to claim 1 or 2 wherein said solid liquid displacement zone comprises a solid liquid separator is selected from the group consisting of a belt filter, a rotary vacuum filter and a rotary disk pack centrifuge.
8. (currently amended): The process according to claim 1 or 2 wherein said solid liquid separator displacement zone is operated at a pressure of less than about 70 psia.
9. (currently amended): The process according to claim 1 or 2 wherein said solid liquid separator displacement zone is operated in continuous mode.
10. (original): The process of claim 1 or 2 further comprising the step of flash cooling said purified carboxylic acid slurry in a flash cooling zone to form a cooled purified slurry.

11. (original): The process according to claim 1 or 2 wherein said purified carboxylic acid slurry is formed without a process for separating impurities from oxidation solvent or hydrogenation step.
12. (original): The process according to claim 1 wherein said purified carboxylic acid slurry has a b^* of less than 3.
13. (currently amended): A process to produce a purified carboxylic acid slurry said process comprising removing in a solid liquid displacement zone impurities from a crystallized product to form said purified carboxylic acid slurry; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 140°C to about 160°C; wherein said solid liquid separator is operated in a continuous mode; wherein said solid liquid separator is operated at a pressure less than 70 psia; wherein said purified carboxylic acid slurry has a b^* of less than 3.5; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone.
14. (original): The process according to claim 13 wherein said solid liquid separator is selected from a group consisting of a rotary disk pack centrifuge, belt filter, rotary vacuum filter, and a decanter centrifuge.
15. (original): The process according to claim 13 further comprising the step of flash cooling said purified carboxylic acid slurry in a flash cooling zone to form a cooled purified slurry.
16. (original): The process according to claim 13 wherein said purified carboxylic acid slurry is formed without an impurity removal process or a hydrogenation step.

17. (original): The process according to claim 13 wherein said purified carboxylic acid slurry has a b^* of less than 3.
18. (currently amended): A process to produce a purified carboxylic acid slurry said process comprising:
- (a) removing impurities from a crude carboxylic acid slurry in an optional solid liquid displacement zone to form a slurry product;
 - (b) oxidizing said slurry product or said crude carboxylic acid slurry in a staged oxidation zone to form a staged oxidation product;
 - (c) crystallizing said staged oxidation product in a crystallization zone to form a crystallized product; and
 - (d) removing in a solid liquid displacement zone impurities from said crystallized product to form said purified carboxylic acid slurry; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C to 200°C.
19. (currently amended): A process to produce a purified carboxylic acid slurry said process comprising:
- a) (a) removing impurities from a crude carboxylic acid slurry in an optional solid liquid displacement zone to form a slurry product;
 - (b) oxidizing said slurry product or crude carboxylic acid slurry in a staged oxidation zone to form a staged oxidation product;
 - (c) removing in a solid liquid displacement zone impurities from said staged oxidation product to ~~form~~ a purified staged oxidation product; wherein said

impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C to 200°C;
and

(d) crystallizing in a crystallization zone said purified staged oxidation product to form said purified carboxylic acid slurry.

20. (original): The process according to claim 18 or 19 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 110°C to about 200°C.
21. (currently amended): The process according to claim 18 or 19 wherein said crude carboxylic acid slurry comprising terephthalic acid, catalyst, acetic acid, and impurities is withdrawn at a temperature between about 110°C and about 200°C from the primary oxidation zone; wherein said catalyst comprises cobalt, manganese or bromine compounds.
22. (original): The process according to claim 18 or 19 wherein said solid liquid displacement zone comprises a solid liquid separator selected from the group consisting of a belt filter, a rotary vacuum filter and a rotary disk pack centrifuge.
23. (original): The process according to claim 18 or 19 wherein said purified slurry is formed without a process for separating impurities from oxidation solvent or hydrogenation step.
24. (original): The process according to claim 18 or 19 wherein said purified slurry has a b^* of less than about 3.5.

25. (original): The process according to claim 18 or 19 further comprising the step of flash cooling said purified terephthalic acid slurry to form a cooled purified slurry.
26. (canceled)
27. (currently amended): A process to produce a purified carboxylic acid slurry comprising:
- (a) removing in an optional solid liquid displacement zone impurities from a crude carboxylic acid slurry to form a slurry product; wherein said crude carboxylic acid slurry comprises terephthalic acid, catalyst, acetic acid, and impurities that is withdrawn at a temperature between about 140°C and about 170°C from the oxidation of paraxylene in a primary oxidation ~~zone~~ zone; wherein said catalyst comprises cobalt, manganese or bromine compounds;
 - (b) oxidizing said slurry product in a staged oxidation zone to form a staged oxidation product; wherein said oxidizing is conducted at a temperature between about 190°C to about 280°C; and wherein said oxidizing is at a higher temperature in said staged oxidation zone than in said primary oxidation ~~zone~~ zone;
 - (c) crystallizing said staged oxidation product in a crystallization zone to form a crystallized product; and
 - (d) removing in a solid liquid displacement zone impurities from said crystallized product to form said purified carboxylic acid slurry; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 110°C to about 200°C wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone.

28. (original): The process according to claim 27 further comprising the step of flash cooling said purified carboxylic acid slurry to form a cooled purified slurry.
29. (original): The process according to claim 13, 18, 19 or 27 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry or a carboxylic acid that has been esterified.
30. (currently amended): The process according to claim 29 wherein said decolorizing is accomplished by reacting said crude carboxylic acid solution with hydrogen in the presence of a catalyst in a reactor zone to produce a decolorized carboxylic acid ~~solution~~. solution; wherein said catalyst comprises a group VIII metal.
31. (original): The process according to claim 18, 19 or 27 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 50°C to about 200°C.